

Amendments to the Claims:

This listing of claims will replace all prior listings of claims in the application:

Listing of Claims:

1. (currently amended) A method of screening *in vitro* for modulators of RDGC GPCR phosphatase activity, the method comprising the steps of:
 - (i) providing a first sample comprising a rhodopsin G protein coupled receptor and a heterologous Drosophila RDGC phosphatase comprising the sequence set forth in SEQ ID NO:1;
 - (ii) contacting the first sample with a test compound suspected of having the ability to modulate RDGC GPCR phosphatase activity;
 - (iii) providing a second sample comprising a mutant rhodopsin lacking the last 18 amino acids at the cytoplasmic terminus as compared to wild type the rhodopsin G protein coupled receptor and a mutant Drosophila RDGC phosphatase comprising the sequence set forth in SEQ ID NO:1;
 - (iv) contacting the second sample with the test compound suspected of having the ability to modulate RDGC GPCR phosphatase activity;
 - (v) detecting Drosophila RDGC GPCR phosphatase activity in the first sample and in the second sample; and
 - (vi) comparing the level of Drosophila RDGC GPCR phosphatase activity in the first sample and the second sample, thereby detecting RDGC GPCR phosphatase activity; thereby detecting modulators of RDGC GPCR phosphatase activity;
wherein the test compound is a RDGC mimetic.
- 2-4. (cancelled)
5. (currently amended) The method of claim 1, wherein the rhodopsin is heterologous recombinant.

6. (previously presented) The method of claim 1, wherein the step of detecting comprises a G-protein coupled receptor phosphorylation assay.

7. (previously presented) The method of claim 1, wherein the step of detecting comprises a G-protein coupled receptor mobility assay.

8. (previously presented) The method of claim 1, wherein the step of detecting comprises a G-protein coupled receptor signal transduction assay.

9. (currently amended) The method of claim 1, wherein the sample comprises the first sample and the second sample comprise a cell.

10. (previously presented) The method of claim 9, wherein the cell is selected from the group consisting of a eukaryotic cell, an insect cell, a mammalian cell.

11. (previously presented) The method of claim 10, wherein the cell is selected from the group consisting of a Drosophila cell or a human cell.

12. (currently amended) The method of claim 1, wherein the sample comprises the first sample and the second sample comprise a membrane comprising a G-protein coupled receptor.

13. (currently amended) The method of claim 1, wherein the sample comprises the first sample and the second sample comprise an aqueous sample or a solid-phase sample.

14. (cancelled)

15. (currently amended) A method of screening a cell for modulators of RDGC GPCR phosphatase activity, the method comprising the steps of:

(i) providing a first sample cell comprising rhodopsin and a heterologous Drosophila RDGC phosphatase comprising the sequence set forth in SEQ ID NO:1;

- (ii) contacting the first sample cell with a test compound suspected of having the ability to modulate RDGC GPCR phosphatase activity;
- (iii) providing a second sample cell comprising a mutant rhodopsin lacking the last 18 amino acids at the cytoplasmic terminus as compared to wild-type the rhodopsin and a mutant Drosophila RDGC phosphatase comprising the sequence set forth in SEQ ID NO:1;
- (iv) contacting the second sample cell with the test compound suspected of having the ability to modulate RDGC GPCR phosphatase activity;
- (v) detecting Drosophila RDGC GPCR phosphatase activity in the first cell and in the second sample cell; and
- (vi) comparing the level of Drosophila RDGC GPCR phosphatase activity in the first sample cell and the second sample cell, thereby detecting RDGC GPCR phosphatase activity; thereby detecting modulators of RDGC GPCR phosphatase activity;
wherein the test compound is a RDGC mimetic.

16. (cancelled)

17. (currently amended) The method of claim 15, wherein the rhodopsin is heterologous recombinant.

18. (cancelled)

19. (currently amended) The method of claim 15, wherein the cell is the first cell and the second cell are selected from the group consisting of a eukaryotic cell, a mammalian cell, an insect cell.

20. (currently amended) The method of claim 19, wherein the cell is the first cell and the second cell are selected from the group consisting of a Drosophila cell or a human cell.

21. (cancelled)

22. (currently amended) The method of claim 15, wherein the sample comprises the first cell and the second cell comprise an aqueous sample or a solid-phase sample.

23-38. (cancelled)